Sundial

HOW TO CREATE YOUR ELEMENTS

Disclaimer: those elements do not allow an exact measurement of time but aim to make the concept easier to understand.

The leporello is a particular narrative format that allows for the creation of a continuous narrative that unfolds and evolves in its successive facades. It consists of a long strip of paper folded in an accordion or zig zag pattern and owes its name to the eponymous valet of Don Giovanni in Mozart's opera, who has a similar pamphlet in which the names of Don Giovanni's mistresses are noted.

LEPORELLO

Two equal strips can be made from an A3-sized sheet by cutting lengthwise. Then simply fold each strip in half and then again in half so as to obtain four equal parts. By doing so, you will have a book consisting of eight "pages" on which to distribute the story. The two sides allow you to create two different settings, for example: before the invention of the sundial and after.

STORAGE

This activity can fit in an envelope.

For the different alternatives (see part below), you may need up to a shoe box to store the elements.
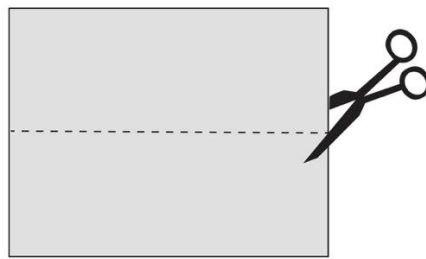
CRAFT THE ELEMENTS

A. Print the Annexes

1. On an A3 sheet (at least 220gr), print the annex "Sundial - Base". You can create material for 2 activities with 1 print.
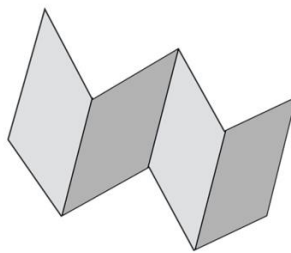2. On an A4 sheet, print the annexes "Sundial – Figures".

B. Prepare the base

Follow the instructions below. The marks on the "Sundial - Base" you have printed indicate the cut or fold locations.

1. Cut the sheet in half lengthways.

2. Create 4 equal parts by folding the slice twice. This will give the paper the usual zig-zag pattern.
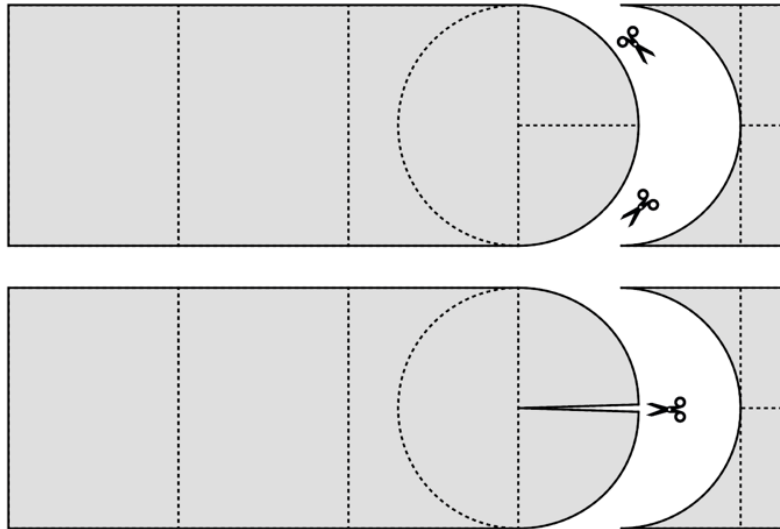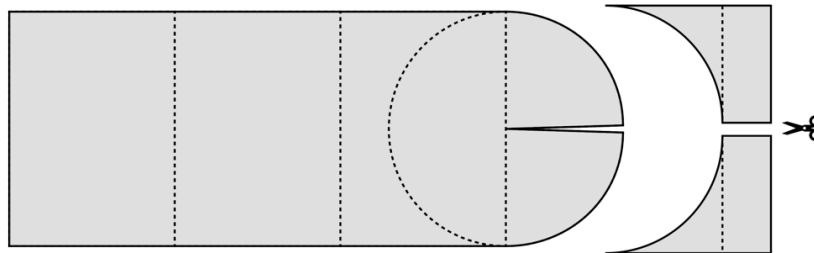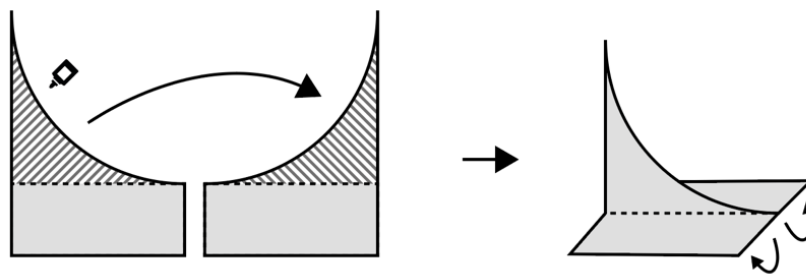
3. Flatten the paper.

4. Cut the top of the circle and the top radius.

5. Cut the base of the gnomon and fold it.
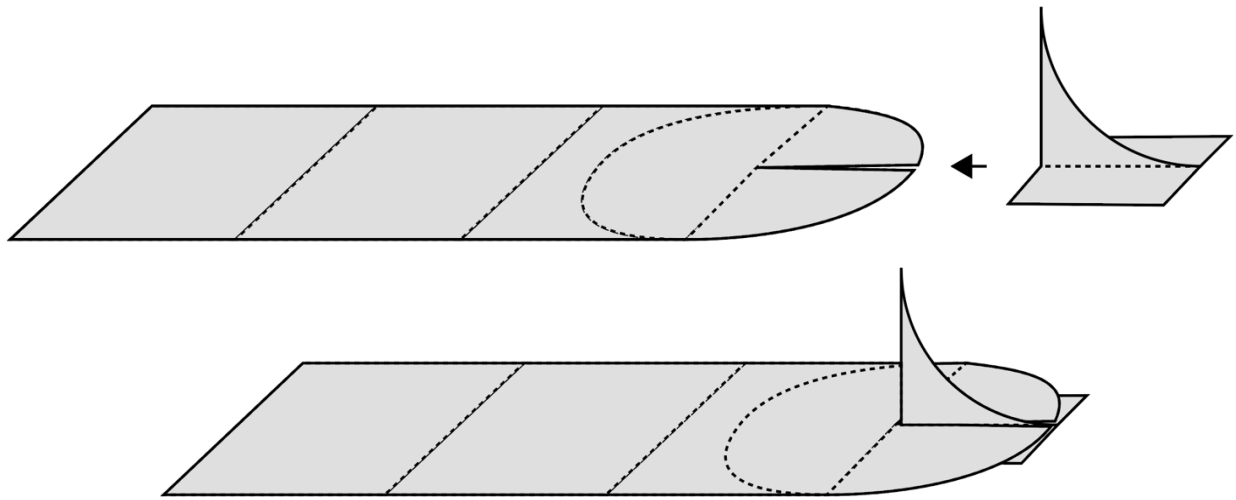

6. Glue the 2 pics together and fold the base.

7. Embed the gnomon in the cut made in the silent book.

Voilà, you have your sundial!

C. Prepare the figures.

Simply cut the figures.

D. Merge the sundial and the figures.

Finally, you can glue your figures on the Sundial to illustrate your story! Have a look at the story we created to see how the figures could fit.

Here are some examples:

TECHNOLOGY

ALTERNATIVES

A. A sundial in the courtyard

If the head of your school agreed, you can create a sundial in your courtyard. You can use paint for a permanent option, otherwise simply use chalk. If you have some grass or natural area, you can use big flat stones. In average, the hour lines are spaced 15°. The correct place for the gnomon will change along the year as the position between the sun and earth is moving: hopefully, you can draw a ruler defining the position according to the month you're in!

Picture from the website
https://www.schooloutdoorlearning.com

B. Laser cut

If your school has a makerspace nearby, you can work with them to create a sundial with a laser cutting machine. If you do this, we recommend to store the sundial in a shoe box.